



# The impact of casinos on fatal alcohol-related traffic accidents in the United States

Chad D. Cotti<sup>a</sup>, Douglas M. Walker<sup>b,\*</sup>

<sup>a</sup> Department of Economics, University of Wisconsin Oshkosh, Oshkosh, WI 54901, USA

<sup>b</sup> Department of Economics and Finance, College of Charleston, Charleston, SC 29401, USA

## ARTICLE INFO

### Article history:

Received 3 March 2010

Received in revised form 3 August 2010

Accepted 4 August 2010

Available online 12 August 2010

### Keywords:

Alcohol

Casinos

Drunk driving

Traffic fatalities

### JEL classification:

H75

K42

L83

## ABSTRACT

Casinos have been introduced throughout the U.S. to spur economic development and generate tax revenues. Yet, casinos may also be associated with a variety of social ills. One issue that has not been empirically tested in the literature is whether there is a link between casino expansion and alcohol-related fatal traffic accidents. We suspect a link may exist since casinos often serve alcohol to their patrons and, by their dispersed nature, could impact driving distances after drinking. Using the variation in the timing and location of casino openings over a 10-year period, we isolate the impact of casino introduction on alcohol-related fatal accidents. Results indicate that there is a strong link between the presence of a casino in a county and the number of alcohol-related fatal traffic accidents. However, this relationship is negatively related to the local-area (county) population. Results prove durable, as we subject them to robustness checks.

© 2010 Elsevier B.V. All rights reserved.

## 1. Introduction

With the exception of Nevada and Atlantic City, NJ, casinos had no significant presence in the United States until Congress passed the Indian Gaming Regulatory Act (IGRA) in 1988. The IGRA opened the door for formalized Indian casinos by allowing gaming to exist on tribal lands, subject to a compact agreement with the state government.<sup>1</sup> Shortly after the IGRA passed, several states also began to legalize commercial casinos. Together these changes in the legislative landscape surrounding casinos led to a tremendous increase in the presence of casinos across the United States. By the end of 2008 commercial casinos were operating in 12 states with annual revenues exceeding \$32 billion (American Gaming Association, 2009), while tribal casinos had opened in 29 states with annual revenues exceeding \$26 billion (National Indian Gaming Commission, 2009). Collectively, the casino sector has a significant economic presence.

While the casino industry is one of the fastest growing entertainment industries in the U.S., its growth is not without

controversy. Casino opponents argue that casinos bring a variety of social problems, including increases in crime, bankruptcy, and divorce. Recently claims of casinos leading to higher drunk driving prevalence have also been noted. For example, newspaper reports often link DUI arrests and/or alcohol-related traffic fatalities to casinos that serve alcohol (e.g., Cornfield, 2009; Smith, 2010). Many casinos follow a “destination resort” model; they include restaurants, bars, shows, shops, and a hotel. Other casinos cater more to a local clientele. At a minimum, both types of casino typically include a bar service and casino customers often enjoy drinking alcohol while they socialize and play casino games. The fact that alcohol is readily available at many casinos suggests that casinos may, in fact, be a catalyst for increased drunk driving and hence, increased alcohol-related traffic fatalities. However, a more detailed look at the possible impact of casinos on drunken driving behavior demonstrates that there could be an inverse relationship between casinos and drunk driving under the right circumstances. Regardless, we are aware of no previous study that rigorously examines the possibility of such a link.

The purpose of this study is to test whether there is, in fact, a relationship between the spread of casinos and the number of alcohol-related fatal traffic accidents. Our analysis utilizes U.S. county-level data from 1990 to 2000, a period of time that saw the overwhelming majority of casino openings in the last 30 years. Overall, this presents a natural laboratory to test the effects of

\* Corresponding author. Tel.: +1 843 953 8192.

E-mail address: [WalkerD@cofc.edu](mailto:WalkerD@cofc.edu) (D.M. Walker).

<sup>1</sup> See Light and Rand (2005) for a comprehensive discussion of tribal casinos and relevant law.

casino entry on accident risk. In the next section we provide background information and discuss various theoretical issues and predictions surrounding possible effects.

In general, our estimates reveal that casino entry does significantly impact the danger posed by drunk drivers, but that the direction and size of this effect is related to the size of the population where the casino opens. Specifically, our best estimate indicates that alcohol-related fatal accidents increase by about 9.2% for casino counties with the mean log population, yet this estimated effect declines as population increases. Although this is a striking result, we will demonstrate below that our estimates are robust to the inclusion of controls for area and time fixed effects, changes in population, changes in other policies that may impact drunk driving behavior (e.g., beer taxes, blood alcohol content regulations), as well as changes in factors that may influence overall driving risk separate from drinking behavior (e.g., road construction, weather). Furthermore, these estimates are also robust to several alternative definitions of the control group, the dependent variable, and to the estimation method selected (e.g., weighted least squares, Poisson, probit).

## 2. Background and theoretical considerations

The principle motivation by governments to allow casinos to open in their jurisdictions is the hope that casinos will create economic growth and increase tax revenues at the state level. The casino expansion of the early 1990s had mostly died off until the 2007–09 recession compounded state-level fiscal crises. Consequently, much of the existing research focuses on the pre-2000 period of time that saw the vast majority of casino openings in the U.S. Given the typical motivation for casinos, research has often focused on evaluating the impacts of casino introduction on economic development or government revenue generation (e.g., Elliott and Navin, 2002; Mason and Stranahan, 1996; Siegel and Anders, 2001). While less numerous, other studies have looked at how casino introduction has impacted consumers' behavior with respect to related sectors of the local economy, such as hotels, restaurants, bars, and property values (e.g., Anders et al., 1998; Popp and Stehwiens, 2002; Siegel and Anders, 1999; Wenz, 2007). Of course, other researchers have also recognized that this large increase in the presence of casinos and gambling could have important impacts on crime, bankruptcy, divorce, and other social ills (e.g., Barron et al., 2002; Curran and Scarpitti, 1991; Garrett and Nichols, 2008; Grinols and Mustard, 2006; Stitt et al., 2003; Thalheimer and Ali, 2004). However, little attention has been paid to how the introduction of casinos into a community or region impacts drinking and driving habits and their effects. This lack of research is surprising, given the degree to which alcohol use often accompanies casino gambling.

There is an extensive literature that estimates the impacts of changes in public policies, such as minimum legal drinking age laws, beer taxes, and zero-tolerance policies, on drunk driving behavior (e.g., Carpenter, 2004; Chaloupka et al., 2002; Dee, 1999; Ruhm, 1996). The motivation behind these policy changes is that they will impact individual behavior and reduce drunk driving. Of course, any factor that changes drinking behavior or the location of drinking activities can impact drunk driving outcomes, whether intended or not. The introduction of casinos into an area may be one such factor.

One can imagine a variety of ways by which casinos might impact drunk driving behavior. For example, there are several reasons to suspect that casino presence may lead to an increase in drunk driving. First, the location of a casino could promote an increase in the total number of miles driven after drinking, which

could lead to an increase in automobile accidents in an area following the opening of a casino. Existing literature on consumer behavior supports the contention that small differences in consumer utility can prompt changes in driving habits. For example, the cross-border shopping literature indicates that people will consume what they desire in an alternate location when their own jurisdiction has limits or restrictions on consumption, or relatively high costs (Asplund et al., 2007; Ferris, 2000). Some Canadians, for example, drive great distances to consume health services in the U.S. In the case of casinos, their presence may draw people from a large surrounding area to gamble. However, this effect on drunk driving fatalities would depend on the extent to which the introduction of casinos actually does lead to a net increase in the number of people driving and the average distance to casinos. The distance to casinos is likely to decrease as casinos become more widespread, but the introduction of casinos could increase the number of people driving in the area immediately surrounding the casino. If this is the case, we would expect that the introduction of a casino will likely increase the number of miles driven in a county, which could also increase the amount of drunk driving accidents, *ceteris paribus*, as drinking and gambling often go together.

Similarly, a product differentiation effect could also lead to greater distances driven after drinking. Specifically, Lee (1997) applies a Löschian location model (Lösch, 1954) to describe the hexagonal market areas created by bar service differentiation. He posits that bar differentiation leads to more drunk driving. As casinos can act as a substitute for bars in many ways, yet allow for extensive gambling activities while drinking, the introduction of a casino may increase the degree of product differentiation among drinking options in an area. So, one can assume that consumers will drive to the casino if their additional transportation and time costs do not cause their total costs to exceed their benefits from being able to gamble and drink. Therefore, the casino represents a new option for some consumers and may be likely to increase the proportional miles driven drunk as a result.

Of course, the impact of casinos on drunk driving could be negative, and this alternative possibility must be considered. The attraction of a nearby casino may cause a substitution effect, as many individuals substitute away from other discretionary pursuits, such as a night out at the local bar or club, to spend an evening gambling at a casino. As a result, if the ability to gamble at a casino creates a sufficient substitute to drinking at a bar, or if casino patrons drink less at the casino than they would have without the casino option, then we may see a decrease in alcohol-related accident risk in an area after the introduction of a casino. Moreover, while many casinos must follow local "bar time" laws when it comes to serving alcohol, the casinos themselves are typically open 24 h. This could give intoxicated individuals the opportunity to sober up before driving home.<sup>2</sup> We should also point out that, unlike casinos in Las Vegas or Atlantic City, which give complementary alcoholic beverages to those gambling, many casinos charge for alcoholic beverages, so a gambler would have to "sacrifice" some of their gambling dollars in order to purchase a drink. This might lead patrons to drink less at the casino than they might have otherwise at some bar or nightclub.<sup>3</sup> Lastly, if we assume that some

<sup>2</sup> We see professional sporting events actively facilitating this behavior as they frequently stop alcohol sales after the third quarter of a football game or after the 7th inning in a baseball game, for example.

<sup>3</sup> Casinos' policies with respect to alcohol vary by market; some states have a law that prohibits casinos providing free alcohol to patrons. That said, there is extensive complexity involved in identifying the casino specific treatment of these policies, which prohibited us from being able to specifically control for casino alcohol policies in our model. This exclusion would only impact our findings significantly if there was correlation between the county population and the likelihood of offering free

Download English Version:

<https://daneshyari.com/en/article/961576>

Download Persian Version:

<https://daneshyari.com/article/961576>

[Daneshyari.com](https://daneshyari.com)